

( $\pm$ )-5-(2-formyl-3-hydroxyphenoxy)-2-methylpentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-2,2-dimethylpentanoic acid;  
methyl 3-(2-formyl-3-hydroxyphenoxy)methylbenzoate;  
3-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
benzyl 5-(2-formyl-3-hydroxyphenoxy)pentanoate;  
5-[4-(2-formyl-3-hydroxyphenoxy)-*N*-butyl]tetrazole;  
7-(2-formyl-3-hydroxyphenoxy)heptanoic acid;  
5-(2-formyl-3-hydroxy-4-*n*-propoxyphenoxy)pentanoic acid;  
5-(4,6-dichloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-*N*-methylsulphonylpentanamide;  
ethyl 4-(2-formyl-3-hydroxyphenoxy)methylbenzoate;  
5-(4-chloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(3-acetylamino-2-formyl phenoxy)pentanoic acid;  
Aminoguanidine;  
4-(2-formyl-3-hydroxyphenoxy)butanoic acid;  
6-(2-formyl-3-hydroxyphenoxy)hexanoic acid;  
ethyl 4-(3-acetylaminio-2-formylphenoxy)methylbenzoate;  
4-(3-acetylamino-2-formylphenoxy)methylbenzoic acid;  
2-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
5-[4-(2-formyl-3-hydroxyphenoxy)methylphenyl]tetrazole;  
5-(2-formyl-3-hydroxy-4-methoxyphenoxy)pentanoic acid;  
3-(2-formyl-3-hydroxyphenoxy)propionitrile;  
4-Hydroxyphenylacetaldehyde;  
Phenylacetaldehyde;  
4-Methoxyphenylacetaldehyde;  
1-hydroxy-2-phenylpropane;  
3-Phenylpropanoaldehyde;  
4-Nitrobenzaldehyde;  
Methyl 4-formylbenzoate;  
4-Chlorobenzaldehyde;  
4-Methoxybenzaldehyde;

4-Methylbenzaldehyde;  
8,10-Dioxoundecanoic acid;  
4,6-Dioxoheptanoic acid;  
Pentanedione;  
5-methoxy-1-tetralone;  
6-methoxy-1-tetralone;  
7-methoxy-1-tetralone;  
2-tetralone;  
3-hydroxy-1-(4-methoxyphenyl)-3-methyl-2-butanone;  
2',4'-dihydroxy-2-(4-methoxyphenyl)acetophenone;  
2-hydroxy-1-(4-methoxyphenyl)-pent-2ene-4one;  
Naringenin 4',5,6-trihydroxyflavonone;  
4'-methoxy-2-(4-methoxyphenyl)acetophenone;  
6,7-dihydroxycoumarin;  
7-methoxy-2-tetralone;  
6,7-dimethoxy-2-tetralone;  
6-hydroxy-4-methylcoumarin;  
Homogentisic acid gamma lactone;  
6-hydroxy-1,2-naphthoquinone;  
8-methoxy-2-tetralone;

and physiologically acceptable salts thereof, where appropriate.

18. (Amended) A method of making the combination of components according to claim 24, which comprises combining a nucleotide sequence which encodes for an antigenic peptide associated with a disease state and a Schiff base forming compound which will enhance both humoral and cellular immune responses initiated by the antigenic peptide, wherein said compound is selected from the group consisting of:

4-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
5-(2-formyl-3-hydroxyphenoxy)pentanamide;  
*N,N*-diethyl 5-(2-formyl-3-hydroxyphenoxy)pentanamide;  
*N*-isopropyl 5-(2-formyl-3-hydroxyphenoxy)pentanamide;

ethyl 5-(2-formyl-3-hydroxyphenoxy)pentanoate;  
5-(2-formyl-3-hydroxyphenoxy)pentanonitrile;  
( $\pm$ )-5-(2-formyl-3-hydroxyphenoxy)-2-methylpentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-2,2-dimethylpentanoic acid;  
methyl 3-(2-formyl-3-hydroxyphenoxy)methylbenzoate;  
3-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
benzyl 5-(2-formyl-3-hydroxyphenoxy)pentanoate;  
5-[4-(2-formyl-3-hydroxyphenoxy)-*N*-butyl]tetrazole;  
7-(2-formyl-3-hydroxyphenoxy)heptanoic acid;  
5-(2-formyl-3-hydroxy-4-*n*-propoxyphenoxy)pentanoic acid;  
5-(4,6-dichloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-*N*-methylsulphonylpentanamide;  
ethyl 4-(2-formyl-3-hydroxyphenoxy)methylbenzoate;  
5-(4-chloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(3-acetylamino-2-formyl phenoxy)pentanoic acid;  
Aminoguanidine;  
4-(2-formyl-3-hydroxyphenoxy)butanoic acid;  
6-(2-formyl-3-hydroxyphenoxy)hexanoic acid;  
ethyl 4-(3-acetylaminio-2-formylphenoxy)methylbenzoate;  
4-(3-acetylamino-2-formylphenoxy)methylbenzoic acid;  
2-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
5-[4-(2-formyl-3-hydroxyphenoxy)methyl]phenyltetrazole;  
5-(2-formyl-3-hydroxy-4-methoxyphenoxy)pentanoic acid;  
3-(2-formyl-3-hydroxyphenoxy)propionitrile;  
4-Hydroxyphenylacetaldehyde;  
Phenylacetaldehyde;  
4-Methoxyphenylacetaldehyde;  
1-hydroxy-2-phenylpropane;  
3-Phenylpropanaldehyde;  
4-Nitrobenzaldehyde;  
Methyl 4-formylbenzoate;

4-Chlorobenzaldehyde;  
4-Methoxybenzaldehyde;  
4-Methylbenzaldehyde;  
8,10-Dioxoundecanoic acid;  
4,6-Dioxoheptanoic acid;  
Pantanedione;  
5-methoxy-1-tetralone;  
6-methoxy-1-tetralone;  
7-methoxy-1-tetralone;  
2-tetralone;  
3-hydroxy-1-(4-methoxyphenyl)-3-methyl-2-butanone;  
2',4'-dihydroxy-2-(4-methoxyphenyl)acetophenone;  
2-hydroxy-1-(4-methoxyphenyl)-pent-2ene-4one;  
Naringenin 4',5,6-trihydroxyflavonone;  
4'-methoxy-2-(4-methoxyphenyl)acetophenone;  
6,7-dihydroxycoumarin;  
7-methoxy-2-tetralone;  
6,7-dimethoxy-2-tetralone;  
6-hydroxy-4-methylcoumarin;  
Homogentisic acid gamma lactone;  
6-hydroxy-1,2-naphthoquinone;  
8-methoxy-2-tetralone;

and physiologically acceptable salts thereof, where appropriate.

24. (Amended) A combination of components for separate, sequential or concomitant administration in a method of vaccinating a mammal against a disease state, comprising administrating to said mammal, within an appropriate vector, a nucleotide sequence encoding an antigenic peptide associated with the disease state; additionally administering to said mammal a Schiff base forming compound which enhances both humoral and cellular immune responses initiated by the antigenic peptide, the compound being selected from the group consisting of:

4-(2-formyl-3-hydroxyphenoxyethyl)benzoic acid;  
5-(2-formyl-3-hydroxyphenoxy)pentanamide;  
*N,N*-diethyl 5-(2-formyl-3-hydroxyphenoxy)pentanamide;  
*N*-isopropyl 5-(2-formyl-3-hydroxyphenoxy)pentanamide;  
ethyl 5-(2-formyl-3-hydroxyphenoxy)pentanoate;  
5-(2-formyl-3-hydroxyphenoxy)pentanonitrile;  
( $\pm$ )-5-(2-formyl-3-hydroxyphenoxy)-2-methylpentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-2,2-dimethylpentanoic acid;  
methyl 3-(2-formyl-3-hydroxyphenoxy)methylbenzoate;  
3-(2-formyl-3-hydroxyphenoxy)methylbenzoic acid;  
benzyl 5-(2-formyl-3-hydroxyphenoxy)pentanoate;  
5-[4-(2-formyl-3-hydroxyphenoxy)-*N*-butyl]tetrazole;  
7-(2-formyl-3-hydroxyphenoxy)heptanoic acid;  
5-(2-formyl-3-hydroxy-4-*n*-propoxyphenoxy)pentanoic acid;  
5-(4,6-dichloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(2-formyl-3-hydroxyphenoxy)-*N*-methylsulphonylpantanamide;  
ethyl 4-(2-formyl-3-hydroxyphenoxyethyl)benzoate;  
5-(4-chloro-2-formyl-3-hydroxyphenoxy)pentanoic acid;  
5-(3-acetylamino-2-formyl phenoxy)pentanoic acid;  
Aminoguanidine;  
4-(2-formyl-3-hydroxyphenoxy)butanoic acid;  
6-(2-formyl-3-hydroxyphenoxy)hexanoic acid;  
ethyl 4-(3-acetylaminio-2-formylphenoxyethyl)benzoate;  
4-(3-acetylamino-2-formylphenoxyethyl)benzoic acid;  
2-(2-formyl-3-hydroxyphenoxyethyl)benzoic acid;  
5-[4-(2-formyl-3-hydroxyphenoxyethyl)phenyl]tetrazole;  
5-(2-formyl-3-hydroxy-4-methoxyphenoxy)pentanoic acid;  
3-(2-formyl-3-hydroxyphenoxy)propionitrile;  
4-Hydroxyphenylacetaldehyde;  
Phenylacetaldehyde;  
4-Methoxyphenylacetaldehyde;

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1-hydroxy-2-phenylpropane;  
3-Phenylproponionaldehyde;  
4-Nitrobenzaldehyde;  
Methyl 4-formylbenzoate;  
4-Chlorobenzaldehyde;  
4-Methoxybenzaldehyde;  
4-Methylbenzaldehyde;  
8,10-Dioxoundecanoic acid;  
4,6-Dioxoheptanoic acid;  
Pentanedione;  
5-methoxy-1-tetralone;  
6-methoxy-1-tetralone;  
7-methoxy-1-tetralone;  
2-tetralone;  
3-hydroxy-1-(4-methoxyphenyl)-3-methyl-2-butanone;  
2',4'-dihydroxy-2-(4-methoxyphenyl)acetophenone;  
2-hydroxy-1-(4-methoxyphenyl)-pent-2ene-4one;  
Naringenin 4',5,6-trihydroxyflavonone;  
4'-methoxy-2-(4-methoxyphenyl)acetophenone;  
6,7-dihydroxycoumarin;  
7-methoxy-2-tetralone;  
6,7-dimethoxy-2-tetralone;  
6-hydroxy-4-methylcoumarin;  
Homogentisic acid gamma lactone;  
6-hydroxy-1,2-naphthoquinone;  
8-methoxy-2-tetralone;

and physiologically acceptable salts thereof, where appropriate;  
wherein the combination comprises the nucleotide sequence encoding for an antigenic peptide and the compound which enhances both humoral and cellular immune responses initiated by the antigenic peptide.